

L Number	Hits	Search Text	DB	Time stamp
1	0	369/178.ccls.	USPAT	2002/03/22 13:19
2	0	369/178.ccls.	USPAT	2002/03/22 13:20
3	1651	369/17\$2.ccls.	USPAT	2002/03/22 13:20
4	998	(Play\$3 and load\$3) near15 (disk or disc)	USPAT	2002/03/22 13:22
5	2	369/17\$2.ccls. and ((Play\$3 and load\$3) near15 (disk or disc))	USPAT	2002/03/22 13:21
6	3247	((CD or Vcd or tape) near3 Play\$3) near15 (disk or disc)	USPAT	2002/03/22 13:25
7	4	369/17\$2.ccls. and ((CD or Vcd or tape) near3 Play\$3) near15 (disk or disc))	USPAT	2002/03/22 13:23
8	1819	(CD or Vcd or dvd or tape) same ((disk or disc) near3 (tray or magaz\$3 or cartridge))	USPAT	2002/03/22 13:27
9	4	369/17\$2.ccls. and ((CD or Vcd or dvd or tape) same ((disk or disc) near3 (tray or magaz\$3 or cartridge)))	USPAT	2002/03/22 13:29
10	1738	Rock\$3 near10 fulcrum	USPAT	2002/03/22 13:29
11	1	((CD or Vcd or dvd or tape) same ((disk or disc) near3 (tray or magaz\$3 or cartridge))) and (Rock\$3 near10 fulcrum)	USPAT	2002/03/22 13:29

discriminating means 25, a subtraction output from the subtraction means 24a is compared with a threshold value corresponding to a detection output when the thickness of the substrate corresponds to 0.9 mm. If the thickness of the substrate of the disk calculated by the subtraction output is smaller than 0.9 mm, it is determined that the disk placed on the tray T is a DVD.

DEPR:

Here, the tray T having a projection Te in the magazine M shown in FIG. 4 is dedicated to the RAM disk. As described above, the projection Te is locked by the lock mechanism in the magazine M to prevent this tray from being manually drawn. However, when the projection Te appearing from the detection window Md of the magazine M is pressed with a tool such as a screwdriver to break or transform the projection Te, even the tray dedicated to the RAM disk can be freely drawn out of the magazine M. In this system, when the tray T is drawn by breaking or transforming the projection Te for some reason, thereafter, the recording surface of the DVD-RAM may stain, and writing precision may be degraded. For this reason, even if a DVD-RAM is placed on this tray T, after the Te is broken, the DVD-RAM is handled as a ROM on which recording is not performed. The disk device is designed such that the optical detection device 2 cannot detect the reflective surface Tf when the projection Te is broken or transformed.

DEPR:

Therefore, if the reflective surface Tf is not detected in step (c) in FIG. 1 so that the tray is determined as a tray dedicated to the ROM disk, and if it is determined in step (d) that the substrate of the disk has a thickness smaller than 0.9 mm (0.6 mm), a disk on this tray T may be a DVD-ROM or a DVD-RAM which is handled as a ROM described above. For this reason, in this case, in step (e), detection light having a wavelength of 780 nm is irradiated from the light source 21 shown in FIG. 5, and a reflectance is examined on the basis of a detection output from the addition means 24b. When the reflectance is higher than 50%, the disk on this tray is discriminated as a DVD-ROM. When the reflectance is lower than 50%, the disk on this tray is discriminated as a DVD-RAM handled as a ROM.

DEPR:

If the thickness of the disk is discriminated such that the thickness is larger than 0.9 mm and equal to 1.2 mm in step (d), in step (f), detection light having a wavelength of 780 nm is irradiated from the light source 21 shown in FIG. 5, and a reflectance is detected on the basis of an addition output from the addition means 24b. If it is determined that the reflectance exceeds 50%, the light from the light source 21 is switched in step (g) to give detection light having a wavelength of 650 nm to the disk. When the reflectance at this time exceeds 50%, the disk placed on the tray dedicated to the ROM disk is discriminated as a CD. However, when the reflectance with respect to the

detection light having a wavelength of 650 nm is lower than 50% in step (g), the disk is discriminated as a **CD-R** which is erroneously placed on the **tray dedicated to the ROM disk**. An error message is displayed on the display of the host computer, and the **tray on which the disk** is placed is forcibly returned into the magazine M.

DOCUMENT-IDENTIFIER: US 6130744 A

TITLE: Optical disk discriminating method, including memory storage, for automatic multiple-disk changer

DID:

US 6130744 A

DEPR:

A disk selecting-driving mechanism 10 is arranged in the housing 1. The disk selecting-driving mechanism 10 can be moved upward and downward in FIG. 3 to select any tray in the magazine M. A drive chassis 11 arranged in the disk selecting-driving mechanism 10 can be rocked on a support shaft 12 serving as a fulcrum. By this rocking operation, a disk on a drawn tray is clamped. On the drive chassis 11, a turntable 13 which is fitted in the central hole of the disk D to clamp it, a spindle motor 14 for rotationally driving the turntable 13, and an optical head 15 are arranged. This optical head 15 has a structure in which objective lenses which are different in numerical aperture can be switched depending on the types of disks, or the numerical aperture of an objective lens can be switched depending on the types of disks.

DEPR:

When the reflective surface Tf of the tray T is detected by the optical detection device 2, a disk placed on this tray T is determined as a RAM disk. However, the RAM disk may be a PD (power disk) or a DVD-RAM (digital-versatile-disk-RAM). In this case, a tray dedicated by the RAM disk is drawn, a disk is loaded on the turntable 13, and data recorded on the disk is read by the optical head 15, so that the disk is discriminated on the basis of the recording format to check whether the disk be a PD or a DVD-RAM. The optical head 15 has a structure in which objective lenses can be switched, or the numerical aperture of an objective lens can be switched. If the optical detection device 2 determines that a RAM disk is placed on the tray, the objective lens in the optical head 15 is switched to an objective lens suitable for a PD or a DVD-RAM at any time, or the numerical aperture of the objective lens is switched, so that the data is read.

DEPR:

When the tray T dedicated to the ROM disk is drawn by the disk selecting-driving mechanism 10, and the disk D is loaded on the turntable 13, the light source 21 of the disk discriminating device 20 shown in FIG. 5 obliquely irradiates detection light on the disk surface. Depending on whether the reflected light be X or Y, the differences of amounts of light received by the light-receiving regions 23a and 23b are different from each other. In the